

15. PLUCKING OF MALE FLOWERS OF *MOMORDICA DIOICA*
BY THE BLACKTHROATED WEAVER BIRD *PLOCEUS*
BENGHALENSIS

Areas where *Lantana* and *Lagerstroemia* are not abundant, flowers of *Cucumis melo* var. *momordica* and *Momordica dioica* are inserted for decoration in half-built nests by male *Ploceus benghalensis*. It is very interesting and curious that only male flowers of these plant species are used.

I studied the insertion of male flowers of *M. dioica* in Eastern Rajasthan, at Tatarpur Mixed Plantation "C", and found many interesting things connected with the problem.

Nesting of the Blackthroated Weaver Bird and flowering of *M. dioica* are coincident in E. Rajasthan. I studied a large number of half-built nests and always found only ♂ flowers or/and petal(s) of ♂ flower(s) or/and petal(s) of the ♀ flower(s) in the egg chamber.

The following appear to be the main reasons for the selection of only ♂ flowers for nest decoration:

1. Ratio of all the opened and unopened (i.e. flowers and flower buds) ♂ and ♀ flowers
2. Ratio of ♂ and ♀ flowers anthesized at one time
3. Relative lengths of flower pedicel of ♂ and ♀ flowers
4. Shape of flower
5. Relative surface areas of ♂ and ♀ flower petals
6. Formation of abscission layer to facilitate detachment of the flower from the pedicel

Ratio of all the opened and unopened ♂ and ♀ flowers:

I studied the ratio of all the opened and unopened flowers and flower buds of *M. dioica*

climbing on various hosts at various localities and got the following results (Table 1).

TABLE 1

| Total length of climbing branch | Total No. of ♂ & ♀ flowers & flower buds | No. of ♂ flowers & flower buds | No. of ♀ flowers & flower buds | Ratio of ♂ : ♀ flowers & flower buds |
|---------------------------------|--|--------------------------------|--------------------------------|--------------------------------------|
| 17000 cm | 3690 | 2770 | 920 | 3:1 |

The above shows that ♂ flowers and flower buds are three times more than ♀ flowers and flower buds, thus more easily available.

Ratio of opened male to female flowers:

I observed 5 plants of *M. dioica* at various localities and counted their opened ♂ and ♀ flowers continuously for 4 days. Data collected is as follows (Table 2).

It is clearly seen from the above that while the ratio between ♂ and ♀ flowers stands at 3:1 before anthesis, it may go as high as 10:1 just after anthesis, making ♂ flowers still more easy to collect.

Relative lengths of pedicels of ♂ and ♀ flowers:

Male flowers are selected may be also because they have a longer pedicel which helps the bird to hold them in its bill more easily. ♀ flowers possess a comparatively short pedicel due to the presence of a massive inferior ovary which would make them less convenient to manipulate.

Shape of flowers:

In male flowers, the lower part of the pedicel makes a shallow cup whose centre possess

MISCELLANEOUS NOTES

TABLE 2

| Days | Plant No. 1 | | Plant No. 2 | | Plant No. 3 | | Plant No. 4 | | Plant No. 5 | | Total No. of flowers | |
|----------------------|-------------|-----|-------------|-----|-------------|-----|-------------|-----|-------------|-----|----------------------|-----|
| | ♂ | ♀ | ♂ | ♀ | ♂ | ♀ | ♂ | ♀ | ♂ | ♀ | ♂ | ♀ |
| 1st day | 18 | 3 | 31 | 2 | 94 | 7 | 17 | 11 | 43 | 5 | 203 | 28 |
| 2nd day | 26 | 4 | 71 | 3 | 97 | 7 | 19 | 12 | 50 | 6 | 263 | 32 |
| 3rd day | 39 | 4 | 66 | 8 | 68 | 3 | 44 | 3 | 45 | 5 | 262 | 23 |
| 4th day | 46 | 2 | 76 | 3 | 81 | 1 | 53 | 7 | 56 | 6 | 312 | 19 |
| Total No. of flowers | 129 | 13 | 244 | 16 | 340 | 18 | 133 | 33 | 194 | 22 | 1040 | 102 |
| Ratio ♂ : ♀ flowers | 9.9 | 1.0 | 15.2 | 1.0 | 13.3 | 1.0 | 4.0 | 1.0 | 8.8 | 1.0 | 10.1 | 1.0 |

fast yellowish-pink colour due to the presence of anthers of the stamens. This is rather an attractive pattern of colours while female flowers are monotonous in colour and lack the cup shaped corolla. In other words, ♂ flowers are more conspicuous and distinctive than female flowers.

Relative surface areas of petals of ♂ and ♀ flowers:

Flowers of *M. dioica* are pentamerous. Average surface area of the petals of ♂ flower is more than of ♀ flower. The average surface area of petals (5 petals) of 5 flowers of each sex taken from the same plant are given below:

| No. of flowers | Average surface area of 5 petals of a ♂ flower | Average surface area of 5 petals of a ♀ flower |
|----------------|--|--|
| 1st flower | 81.0 mm ² | 40.8 mm ² |
| 2nd flower | 108.0 mm ² | 36.8 mm ² |
| 3rd flower | 99.7 mm ² | 35.5 mm ² |
| 4th flower | 87.8 mm ² | 37.0 mm ² |
| 5th flower | 105.0 mm ² | 38.0 mm ² |

The broader surfaces of the petals of a ♂ flower attract the male bird from a distance.

Formation of abscission layer:

If we pull a ♂ fresh or old flower or flower bud holding it by the petals, it detaches from the pedicel just between the calyx and the bracteole very easily. After anthesis each over mature flower detaches from this point situated above the bracteole. This is the specific point where detachment occurs due to the development of abscission layer. Such a condition does not obtain in the ♀ flowers if they have been pollinated and fertilized. In other words, the plucking of male flowers is easier while female flowers need more exertion.

I suggest these are some of the reasons why the male *P. benghalensis* selects only the male flowers of *M. dioica* for its nest decoration.

FORESTER,
I/c. MIXED PLANTATION,
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